Dr. Patrick R. Veres

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Education

Ph.D. Atmospheric Chemistry 2005 - 2011
University of Colorado *Boulder, CO*
Thesis Advisor: Joost de Gouw
Thesis Title: Development and Use of Negative-Ion Proton-Transfer Chemical-Ionization Mass Spectrometry for the Measurement of Gas-Phase Acids.

B.S. Chemistry, *magna cum laude with Honors and Distinction* 2001 - 2005
The Ohio State University *Columbus, OH*
Thesis Advisor: Heather Allen
Thesis Title: FTIR Analysis of Particulate Matter Collected on Teflon Filters in Columbus, OH

Professional Appointments

Research Chemist 2018 – present
NOAA ESRL/CSL *Boulder, CO*
Tropospheric Chemistry Group

Research Scientist 2013 – 2018
NOAA ESRL/CSD & CIRES *Boulder, CO*
Tropospheric Chemistry Group

Postdoctoral Research 2011-2013
Max-Planck-Institute for Chemistry *Mainz, Germany*
Post-Doctoral Advisor: Jonathan Williams

Honors and Awards

- 2014 Colorado Governor's Award for High-Impact Research - *Research Scientist*
- 2014 CIRES Innovative Research Program Award - *Research Scientist*
- 2011 Atmospheric Chemistry Colloquium for Emerging Senior Scientists (ACCESS) Participant - *Graduate*
- 2009 AGU (American Geophysical Union) Fall meeting outstanding student paper award - *Graduate*
- 2004 Gary G. Marconi Scholarship Fund in Chemistry - *Undergraduate*
- 2001 Maximus Scholarship Competition Tradition Scholarship – *Undergraduate*

Field Deployments

Aircraft Deployments:

Atmospheric Tomography Mission (ATom, 2017-2018)

- Instrument development and deployment of an Iodide Ion Time-of-Flight Chemical Ionization Mass Spectrometer for the measurement of halogens species and trace gases on a global-scale, profiling continuously from 0.2 km to 14 km altitude.
  URL: *https://espo.nasa.gov/atom*

Wintertime Investigation of Transport, Emission, and Reactivity (WINTER, 2015)

- Instrument development and deployment of an Acetate Ion Time-of-Flight Chemical Ionization Mass Spectrometer for the measurement of organic acids in the Eastern US during wintertime aboard the NCAR C130 aircraft.
  URL: *https://www.eol.ucar.edu/field_projects/winter*

Southeast Atmosphere Study / Southeast Nexus (SAS/SENEX, 2013)

- Deployment of a Thermal Desorption Chemical Ionization Mass Spectrometer for the measurement of peroxyacyl nitrates (PANs) across the Southeastern US aboard the NOAA P3 aircraft.
  URL: *http://www.esrl.noaa.gov/csd/projects/senex*

Aerosol, Radiation, and Cloud Processes affecting Arctic Climate (ARCPAC, 2008)

- Laboratory instrument conversion and method development for an airborne field deployment of a Particle-into-Liquid Sampler (PILS) for the measurement of aerosol composition in the Arctic region aboard the NOAA P3 aircraft.
  URL: *http://www.esrl.noaa.gov/csd/projects/arcpac*

Ground Based Measurements:

Uintah Basin Winter Ozone Study (UBWOS, 2013/2014)

- Primary investigator responsible for the deployment and operation of an Iodide Ion Chemical Ionization Quadrupole Mass Spectrometer (reactive nitrogen gases), UV Florescence spectrometer (gaseous SO_2), and UV absorbance spectrometer (gaseous O_3) during the 2014 deployment. Co-investigator responsible for the operation of the Proton-Transfer-Reaction Time-of-Flight Mass Spectrometer (volatile organic compounds) during the 2013 deployment. The focus of this study was to better understand the the sources and atmospheric fate of pollutants observed in the Uintah basin and the relation to oil and gas operations in the region.
  URL: http://www.esrl.noaa.gov/csd/groups/csd7/measurements/2013ubwos

California Nexus (CalNex, 2010)

- Principle investigator responsible of the laboratory method development from proof of concept to instrument design and construction, and the first field deployment of an Acetate Ion Time-of-Flight Chemical Ionization Mass Spectrometer for the measurement of organic and inorganic acids in the California basin during summertime pollution events.
  URL: http://www.esrl.noaa.gov/csd/projects/calnex/

Particles and Radicals: Diel observations of the impact of urban and biogenic Emissions (PARADE, 2011)

- Co-investigator responsible for the preparation, deployment, and operation of a Proton-Transfer-Reaction Time-of-Flight Mass Spectrometer (volatile organic compounds) as a heavily instrumented semi-rural site (Taunus Observatory, summit of the Kleiner Feldberg, Germany). Study was constructed to examine the effects of biogenic and anthropogenic emissions of radical chemistry and impacts on the formation, growth, and composition of atmospheric aerosols.
  URL: http://parade2011.mpich.de

Smoke Understanding through Regional Fire Simulations (SMURFS, 2009)

- Deployment of a Proton-Transfer-Reaction Time-of-Flight Mass Spectrometer at the Fire Sciences Laboratory in Missoula, MT for the observation of organic gases emitted from

biomass burning and secondary oxidation products formed from subsequent OH and O_3 oxidation reactions.
URL: *http://chem.atmos.colostate.edu/FLAME*

Chamber Studies:

Firelab at Missoula Experiment (FLAME IV, 2012)

- Deployment of a Proton-Transfer-Reaction Time-of-Flight Mass Spectrometer at the Fire Sciences Laboratory in Missoula, MT for the observation of organic gases emitted from biomass burning and secondary oxidation products formed from subsequent OH and O_3 oxidation reactions.
  URL: http://chem.atmos.colostate.edu/FLAME

Chamber Experiments Examining Reactivity and Species (CHEERS, 2011)

- Deployment of a Proton-Transfer-Reaction Time-of-Flight Mass Spectrometer at the European Photoreactor (EUPHORE) chamber in Valencia, Spain for the measurement of OH-initiated isoprene photoxidation products.

Nautical Studies:

Surface Ocean Processes in the Anthropocene (SOPRAN, M91 R/V Meteor, 2012)

- Principle investigator responsible for the preparation, deployment, and operation of a Proton-Transfer-Reaction Time-of-Flight Mass Spectrometer (volatile organic gases) as part of the heavily instrumented Research Vessel Meteor during a one month cruise off the coast of Peru. This study was designed to develop an improved understanding of the impact of oceanic upwelling events on the partitioning of volatile gases at the surface of the ocean.
  URL: http://sopran.pangaea.de

Publications

An online summary of publications and URLs for access can be found elsewhere:
http://www.researcherid.com/rid/E-7441-2010